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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/005,889
Filing Date: November 07, 2001
Appellant(s): BLACK, ROBERT D.

D. Scott Moore
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/20/06 appealing from the Office action mailed 03/03/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,551,838	Santini, Jr. et al.	04-2003
2001/0051766	Gazdzinski	12-2001
6,217,869	Meyer et al.	04-2001

6,119,031	Crowley	09-2000
2002/0072784	Shepard, JR. et al.	06-2002
6,491,666	Santini, Jr. et al.	12-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8, 15-17 and 29-31, 36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Santini, Jr. et al (US 6,551,838).

Santini, Jr. et al. disclose a circuit for in vivo applications. Santini, Jr. et al. disclose the circuit comprises a fiber optic which emits light (optical radiation source). Santini, Jr. et al also discloses that the fiber optic can detect and measures changes (optical radiation detector) in fluorescence or some other optical phenomenon. Santini, Jr. et al disclose control circuitry coupled to the fiber optic (col 9, lines 54-67, col 15, line 59 – col 16, line 43 and Figure 7) and teaches the control circuitry comprises a microprocessor which is programmed for timed events (col 15, line 59- col 16, line 43).

Santini, Jr. et al disclose that the circuit is capable of releasing molecules from the device (col 2, lines 41-51)(col 6, lines 12-14). Santini, Jr. et al disclose coating or encapsulating all components of the circuit in a biocompatible material such as polyethylene glycol or metal or ceramic (col 9, lines 47-51 and col 15, lines 47-51). Santini, Jr. et al disclose the circuit is on a backing plate (platform) (col 17). Santini, Jr. et al disclose the device can be the size of a millimeter (col 4, lines 35-36).

With respect to the recitation "optical radiation emitted by excited labeled binding molecules" as recited in the instant claims. Since Santini Jr., et al teach the same circuit as recited, the circuit of Santini Jr., is capable of detecting excited labeled binding molecules and therefore, Santini Jr., et al anticipates the claims.

With respect to the fluorescently labeled antibodies as recited in the instant claims. The fluorescently labeled antibodies are not part of the circuit and thus Santini Jr., et al reads on the instantly recited claims because Santini Jr. et al is capable of releasing fluorescently labeled antibodies.

With respect to the recitations "for in vivo use that emits first optical radiation", "for in vivo use that detects second optical radiation emitted by excited labeled binding molecules" and "and "configured to release", "configured to activate" and "configured to sense" these recitations are intended use of the circuit and a recitation of intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention form the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Therefore, Santini Jr. et al reads on the instantly recited claims.

With respect to 29-31, 36 and 37 since Santini Jr. et al disclose the same structures as recited in the instant claims and since Applicant has not recited any structural differences over Santini Jr. et al., the circuit of Santini Jr. et al is capable of performing the limitations of the recited claims and therefore, Santini Jr. et al anticipates the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Santini Jr. et al. (US 6,551,838) in view of Gazdzinski (US 2001/0051766) or Meyer et al (US 6,217,869).

See above for the teachings of Santini Jr. et al.

Santini Jr. et al differ from the instant invention in failing to specifically teach the optical radiation source comprises a laser.

Gazdzinski et al disclose a laser coupled to a fiber optic (page 14, paragraph 0177, Fig. 11). Gazdzinski et al disclose that this provides for the transmission of light energy in an efficient manner (paragraph 0177).

Meyer et al disclose a fiber optic coupled to a laser (col 49, lines 19-25). Meyer et al disclose that this provides for the precise delivery of light.

It would have been obvious to one of ordinary skill in the art to incorporate a laser as taught by Gazdzinski et al into the device of Santini Jr. et al because it is well known in the art to couple fiber optics with lasers and further because Gazdzinski et al shows that this provides for the transmission of light energy in an efficient manner.

It would have also been obvious to one of ordinary skill in the art to incorporate a laser as taught by Meyer et al into the device of Santini Jr. et al because it is well known in the art to couple fiber optics with lasers and further because Meyer teaches that this provides for the precise delivery of light.

Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Santini Jr. et al (US 6,551,838) in view of Crowley (US 6,119,031).

See above for the teachings of Santini Jr. et al.

Santini Jr. et al differ from the instant invention in failing to teach the optical radiation detector is photodiode. Santini Jr. et al also fails to specifically teach filters coupled to the radiation source and radiation detector.

Crowley teaches a circuit comprising a light source (optical radiation source) and a light detector (optical radiation detector). Crowley teaches that the light source illuminates a substance and the detectors detect optical properties of the illuminated

substance by measuring modified light signals (col 2, lines 18-31) (Figure 1A). Crowley teaches the circuit comprises a modulator for modulating the light source and also comprises an analog to digital converter and a microprocessor for spectral analysis (col 3, lines 34-57). Crowley teaches the light source may be a light emitting diode and the light detector may be a photodiode (col 2, lines 44-50). Crowley teaches the light source may be coupled to a filter (col 9, lines 8-11). Crowley teaches the light detector may be coupled to a filter (col 5, lines 20-48, Fig. 2A and Fig. 4). Crowley teaches that this provides for a device which is less expensive and are less complex and advantageous of optical fibers (col 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a detector and filters as taught by Crowley into the method of Santini Jr. et al because Santini Jr. et al specifically teaches that a sensing component such as a light detecting component can be used with the device of Santini Jr. et al and further because Crowley teaches that this provides for a device which is less expensive and are less complex and advantageous of optical fibers.

With respect to the first frequency is greater than the second frequency as recited in the instant claims. This limitation depends on the label that is used, and the label is not part of the circuit and therefore, whether or not the first frequency is greater than the second frequency is irrelevant. Therefore, Santini Jr., et al and Crowley read on the instantly recited claims.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Santini Jr. et al in view of Sheppard, Jr. et al (US 2002/0072784).

See above for teachings of Santini Jr. et al.

Santini Jr. et al differ from the instant invention in failing to teach an inductor coupled to the processor (page 5, paragraph 0055 and Figure 1).

Sheppard Jr. et al. disclose an inductor coupled to a processor. Sheppard Jr. et al discloses that this inductor provides for devices, systems and methods for wirelessly powering and/or communicating with microchip devices used for the controlled exposure and release of reservoir contents (abstract). Sheppard Jr. et al also teaches that this provides for devices for reducing or eliminating the need for pre-charged power sources and provides avoiding explantation of implanted microchip devices for the purpose of replacing or recharging the devices power source or for the purpose of reprogramming the devices' microprocessor and also provides additional means for powering and communicating with microchip devices (page 1, paragraphs 0007-0009).

It would have been obvious to one or ordinary skill in the art at the time the invention was made to incorporate an inductor such as taught by Sheppard Jr. et al into the processor of Santini Jr. et al because Sheppard Jr. et al teaches that this inductor provides for devices, systems and methods for wirelessly powering and/or communicating with microchip devices used for the controlled exposure and release of reservoir contents (same type of device as disclosed in Santini Jr. et al.) and further because Sheppard Jr. et al also teaches that this provides for devices for reducing or eliminating the need for pre-charged power sources and provides avoiding explantation of implanted microchip devices for the purpose of replacing or recharging the devices power source or for the purpose of reprogramming the devices' microprocessor and

also provides additional means for powering and communicating with microchip devices.

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Santini, Jr. et al (US 6,551,838) in view of Santini Jr. et al (US 6,491,666).

See above for the teachings of Santini Jr. et al (US 6,551,838).

Santini Jr. et al (US 6,551,838) differs from the instant invention in failing to specifically teach a piezoelectric circuit responsive to the processor circuit, wherein the piezoelectric circuit is configured to vibrate under control of the processor circuit to release the labeled binding molecules.

Santini Jr. et al (US 6,491,666) disclose microfabricated devices for the release of molecules. Santini Jr. et al (US 6,491,666) disclose piezoelectric elements such as a thin film of piezoelectric material that form a barrier layer. Santini Jr. et al (US 6,491,666) disclose that actuation of this piezoelectric material is achieved by components located on the device that generate ultrasonic energy (col 12, lines 11-47). Therefore, Santini Jr. et al (US 6,491,666) disclose a piezoelectric circuit. Santini Jr. et al (US 6,491,666) disclose that these components are activated by control circuitry (col 3). Santini Jr. et al (US 6,491,666) disclose that this provides for an alternative active release device (col 12) and also provides for accurate and reliable delivery of molecules. (col 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate piezoelectric elements and components as taught by Santini Jr. et al (US 6,491,666) into the device of Santini Jr. et al (US 6,551,838) because Santini Jr. et al

(US 6,551,838) specifically teaches that the barrier layer is responsive to a stimulus (col 8, lines 53-57) and Santini Jr. et al (US 6,491,666) teaches that this provides for disintegration of a barrier layer and also this provides for an alternative active release device which provides for accurate and reliable delivery of molecules. Therefore one of ordinary skill in the art would have a reasonable expectation of success incorporating piezoelectric elements and components as taught by Santini Jr. et al (US 6,491,666) into the device of Santini Jr. et al (US 6,551,838).

(10) Response to Argument

Appellant argues that Santini does not disclose, for example, a processor circuit configured to "release fluorescently labeled antibodies selected to bind with predetermined Tumor Specific Antigens," and "configured to activate the in vivo optical radiation source after a predetermined first time interval after release of the fluorescently labeled antibodies", where the "predetermined first time interval [is] selected to allow a first portion of the fluorescently labeled antibodies to bind with local available TSAs and a second portion of the fluorescently labeled antibodies to become remote from the circuit so that the first optical radiation excites the first portion of the fluorescently labeled antibodies bound with the local available TSAs and does not excite the second portion of the fluorescently labeled antibodies that become remote," and "configured to sense a voltage generated by the in vivo optical radiation detector after a second predetermined time interval, the second predetermined time interval being after emission of the first optical radiation has ceased". This is not found persuasive because

the fluorescent labeled antibodies are not a part of the circuit and are thus irrelevant. Further, the circuit of Santini is capable of releasing molecules from the device, (see for example col 2, lines 41-51) and Santini Jr. et al also discloses the circuit comprises a microprocessor that is programmed to activate the barrier layers to release the molecules and teaches that it can be programmed for timed exposure of molecules (col 1, lines 47-49, col 2, lines 22-41, col 8,lines 14-67, col 9, line 32-col 10, line 67, col 15, line 59- col 16, line 43 & col 17, lines 3-23). Therefore, Santini is capable of releasing fluorescently labeled antibodies and releasing at timed intervals. Further, the limitations which applicant relies upon "configured to release fluorescently labeled antibodies selected to bind with predetermined tumor specific antigens" is intended use of the circuit and as stated above and in the previous office action a recitation of intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention form the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Therefore, Santini Jr. et al reads on the instantly recited claims. Further, language such as "configured to" that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of the claim or claim limitation (MPEP 2106).

Appellant argues that a processor that is programmed to provide a particular function is structurally different than other processor circuits that are programmed to provide a different function and Appellant also argues that Appellant's programmed machine is structurally different from a machine without that program. This is not found

persuasive because of reasons stated above and further because Santini Jr. et al specifically teaches preprogramming and programming a microprocessor to perform functions in "in vivo" applications and teaches that it can be used to selectively expose molecules and controlled or selective on demand sensing to detect fluorescence (col 16, lines 45-63) and programmed for timed intervals (see above). Further, such language as programmed is not recited in the claims. Therefore, since Santini Jr. et al teaches the same structures as recited in the instant claims and since Applicant has not recited any structural differences over Santini Jr. et al. the circuit of Santini Jr. et al is capable of performing the limitations of the recited claims. Nevertheless Santini Jr. et al teaches programming to provide functions of releasing and detecting, Santini Jr. et al can and is capable of the functions Appellant argues. Therefore, there is no difference between the recited claims and Santini Jr. et al.

Appellant argues that the structure of a microprocessor programmed to carry out an algorithm is limited by the disclosed algorithm. A general purpose computer, or microprocessor, programmed to carry out an algorithm creates "a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software. This is not found persuasive because such language as algorithms are not recited in the claim and Appellant has not disclosed algorithms in the specification. Further, as stated above and as shown in the previous office action in col 9, lines 54-67, col 15, line 59-col 16, line 43 and Figure 7 the circuit comprises a

microprocessor which is capable of performing the intended use and functional language as recited.

Appellant argues that dependent claims 9-14 and 35 are patentable for at least the reasons described in reference to independent claim 8. This is not found persuasive because it is the Examiner's position that Santini Jr. et al reads on the instantly recited claims and therefore the rejection of the dependent claims ARE maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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